

WHAT IS CLAIMED IS:

1. A local oscillator providing in-phase local oscillating signal and quadrature-phase signal to first and second mixers outputting input signal with mixing in-phase local oscillating signal and quadrature-phase local oscillating signal, respectively, comprising:

a local oscillating unit having first and second delay cells and outputting said in-phase local oscillating signal and said quadrature-phase local oscillating signal; and

a correction circuit for controlling phase matching characteristic between said in-phase local oscillating signal and said quadrature-phase local oscillating signal outputted from said local oscillator, said correction circuit setting bias current flowing in said first and second delay cells of said local oscillator as being different.
2. The local oscillator of claim 1, wherein said first delay cell of said local oscillating unit has + and - input nodes, + and - output nodes and correction node, said cell converting phase of signal applied to said + and - input nodes and outputting it to said - and + output nodes; wherein said second delay cell of said local oscillating unit has + and - input nodes which connect with said - and + output nodes of said first delay cell, - and + output nodes connecting with said + and - input nodes of said first delay cell and correction node. said cell converting phase of signal applied to said + and - input nodes and outputting it to said - and + output node; and wherein bias current flowing in said first and second delay cell is controlled by current flowing in said correction node.

3. The local oscillator of claim 1, wherein said correction circuit comprises first and second varying-current sources, said first and second varying-current sources being connected between correction node of said first and second delay cells and first power.
4. A local oscillator providing in-phase local oscillating signal and quadrature-phase signal to first and second mixers outputting input signal with mixing in-phase local oscillating signal and quadrature-phase local oscillating signal, respectively, comprising:
- a local oscillating unit having first and second delay cells and outputting said in-phase local oscillating signal and said quadrature-phase local oscillating signal; and
 - a correction circuit for controlling phase matching characteristic between said in-phase local oscillating signal and said quadrature-phase local oscillating signal outputted from said local oscillator, said correction circuit setting bias voltage applied to first and second delay cells as being different.
5. A local oscillator providing in-phase local oscillating signal and quadrature-phase signal to first and second mixers outputting input signal with mixing in-phase local oscillating signal and quadrature-phase local oscillating signal, respectively, comprising:

a local oscillating unit having first, second and third terminals, first and second delay cells comprising active devices controlling current flowing to said third terminal from said second terminal in proportion to applied voltage to said first terminal, said oscillator outputting said in-phase local oscillating signal and said quadrature-phase local signal; and

a correction circuit having first, second and third terminals connecting with said first, second and third terminals of said active device, respectively and controlling phase matching characteristic between said in-phase local oscillating signal and said quadrature-phase local signal outputted from said local oscillator by setting width of active device included in said first and second delay cells as being different.

6. The local oscillator of claim 5, wherein said correction circuit has first, second and third terminals, one or more active devices and switching means, said active device controlling current flowing to said third terminal from said second terminal in proportion to voltage applied to said first terminal, the first terminal of said active device forming said first terminal of said correction circuit, said second terminal forming said second terminal of said correction circuit, said third terminal of said active device being connected with one end of said switching means, the other end of said switching means forming said third terminal of said correction circuit.

7. The local oscillator of claim 5 or 6, wherein said active device is nMOSFET device, said first terminal is a gate and, second terminal is a drain and said third terminal is a source.
8. The local oscillator of claim 5 or 6, wherein said active device is pMOSFET device, said first terminal is a gate, said second terminal is a source and said third terminal is a drain.
9. A local oscillator providing in-phase local oscillating signal and quadrature-phase signal to first and second mixers outputting input signal with mixing in-phase local oscillating signal and quadrature-phase local oscillating signal, respectively, comprising:
a local oscillating unit comprising first and second delay cells comprising passive device having specific impedance and outputting said in-phase local oscillating signal and said quadrature-phase local oscillating signal; and
a correction circuit having first and second terminals connecting with one end and the other end of said passive device and controlling phase matching characteristics between said in-phase local oscillating signal and said quadrature-phase local oscillating signal being outputted from said local oscillator by making impedance of said passive device included said first and second delay cells different.

10. The local oscillator of claim 9, wherein said correction circuit comprises a passive device and switching means having specific impedance, one end of said passive device being connected with said first terminal of said correction circuit, the other end being connected with said one end of said switching means, the other end of said switching means being connected with said second terminal of said correction circuit.

11. The local oscillator of claim 9 or 10, wherein said passive device is an inductor.

12. The local oscillator of claim 9 or 10, wherein said passive device is a capacitor.

13. A receiver comprising:

a local oscillator having first and second delay cell and outputting in-phase local oscillating signal and quadrature-phase local oscillating signal;

first and second mixers mixing input signal with said in-phase local oscillating signal and said quadrature-phase signal, respectively and outputting the mixed signal; and

a correction circuit for controlling phase matching characteristic between said in-phase local oscillating signal and said quadrature-phase local oscillating signal outputted from said local oscillator, said correction circuit setting bias voltage applied to first and second delay cells as being different.

14. A receiver comprising:

a local oscillator having first and second delay cell and outputting in-phase local oscillating signal and quadrature-phase local oscillating signal;
first and second mixers mixing input signal with said in-phase local oscillating signal and said quadrature-phase signal, respectively and outputting the mixed signal; and
a correction circuit for controlling phase matching characteristic between said in-phase local oscillating signal and said quadrature-phase local oscillating signal, outputted from said local oscillator, said correction circuit setting bias voltage applied to first and second delay cells as being different.

15. A receiver comprising:

a local oscillator having first, second and third terminals, first and second delay cells comprising active devices controlling current flowing to said third terminal from said second terminal in proportion to applied voltage to said first terminal, said oscillator outputting said in-phase local oscillating signal and said quadrature-phase local signal;
first and second mixers mixing input signal with said in-phase local oscillating signal and said quadrature-phase signal, respectively and outputting the mixed signal; and
a correction circuit having first, second and third terminals connecting with said first, second and third terminals of said active device, respectively and correcting phase matching characteristic between signals outputted from said first and second

mixers by setting width of active device included in said first and second delay cells as being different.

16. A receiver comprising:

a local oscillator comprising first and second delay cells comprising passive device having specific impedance and outputting said in-phase local oscillating signal and said quadrature-phase local oscillating signal;

first and second mixers mixing input signal with said in-phase local oscillating signal and said quadrature-phase signal, respectively and outputting the mixed signal; and

a correction circuit having first and second terminals connecting with one end and the other end of said passive device and controlling phase matching characteristics between said in—phase local oscillating signal and said quadrature-phase local oscillating signal being outputted from said local oscillator by making impedance of said passive device included said first and second delay cells different.